

Preliminary Draft Phase 1 Municipal Stormwater NPDES Permit
City of Seattle Comments: Attachment 1
August 31, 2005

OVERVIEW

This attachment contains detailed discussion points and recommendations regarding three Special Conditions contained in Ecology's Preliminary Draft Phase 1 Municipal Stormwater NPDES Permit (May 2005). Part A of this attachment addresses together Special Condition S2 (Authorized Discharges) and Special Condition S5 (Compliance with Standards). Part B of this attachment addresses Special Condition S6 (Monitoring).

PART A: AUTHORIZED DISCHARGES & COMPLIANCE WITH STANDARDS

Summary Recommendation. Seattle's recommendation provides a more clear linkage among requirements contained in Special Condition S2 (Authorized Discharges), Special Condition S5 (Compliance with Standards), Special Condition S7 (Stormwater Management Program), Appendix 1 (Minimum Technical Requirements), and associated definitions of key terms. Seattle's recommendation is based on five principles:

1. Every requirement placed on a Permittee must be based on actions or conditions that are within existing legal authority of the Permittee and for which the Permittee can reasonably be held accountable.
2. Compliance with the Permit constitutes meeting the requirement to reduce pollutants in municipal stormwater discharges to the Maximum Extent Practicable (MEP) per the federal Clean Water Act.
3. The standards contained in Ecology's *Stormwater Management Manual for Western Washington (2005)* represent the application of all known, available, and reasonable technologies (AKART) as defined in RCW 90.48.
4. Compliance with the permit will be presumed to constitute compliance with existing regulatory requirements for stormwater unless site-specific information is made available that demonstrates the contrary.
5. If site-specific information demonstrates that a water quality problem occurring in a receiving water body owing to a discharge from a Permittee's MS3, then a clearly defined set of actions, review, and approval processes involving both the Permittee and Ecology should be provided in the Permit.

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Seattle Proposed Permit Language. Seattle's recommended modifications to Special Conditions S2 (Authorized Discharges) and S5 (Compliance with Standards) is provided in the section below, with summary justification included: Additional comments are provided in the next section.

S2. AUTHORIZED DISCHARGES – SEATTLE PROPOSED REVISION

A. This permit authorizes the discharge of stormwater to surface waters and to ground waters of the state from municipal separate storm sewers owned or operated by each Permittee, Co-Permittee, and Secondary Permittee identified in Special Condition S1 as follows:

1. New and existing discharges from existing conveyances. ~~Existing stormwater discharges.~~
2. Discharges from new stormwater conveyances ~~New stormwater discharges~~ constructed after the issuance date of this permit that have received all applicable state and local permits and use authorizations, including compliance with Ch. 43.21C RCW, and where the Permittee is in compliance with Special Condition S7.C.5 (Controlling Runoff from New Development, Redevelopment and Construction Sites) of this permit.

[Seattle Note: Differentiating between “existing stormwater discharges” and “new stormwater discharges” is not required to ensure the CWA’s requirement to reduce pollutants to the Maximum Extent Practicable (MEP). Seattle’s proposed text in paragraphs 1 and 2 above returns to the baseline language of the 1995 NPDES Municipal Stormwater Permit, which has proved adequate for the past 10 years. The term “conveyance” is found throughout the 40 CFR 122.26 (Stormwater Discharges) and is taken to include pipes, conduits, ditches, and channels. In paragraph 2 above, authorization for discharges from new stormwater conveyances is clearly linked to the requirements for new development and redevelopment in the SWMP. The reference to S7.C.5 is to ensure Ecology’s Minimum Requirements are only to be applied to new development and redevelopment and not to the entire drainage basin whenever a new outfall is constructed. (For more discussion regarding new and existing discharges and new outfalls, see Additional Comments in the next section.)]

3. Stormwater discharges to ground waters of the state are covered under this permit, except that stormwater discharges to ground waters of the state that discharge through facilities regulated under the Underground Injection Control (UIC) program, Chapter 173-218 WAC, are not covered under this permit.

[Seattle Note: Although there are no proposed changes to paragraph 3 above as originally drafted by Ecology, Seattle encourages Ecology’s permit writers to clarify with the Ecology staff administering the UIC program which specific types of facilities will be governed by the UIC regulations.]

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4. Stormwater discharges to ground waters [that have not been determined in writing by Ecology to flow to waters of the United States] are covered in this permit only under state authorities, Chapter 90.48 RCW, the Water Pollution Control Act. [Added text underlined.]

[Seattle Note: The reference originally in paragraph 4 above to hydraulic connectivity has been deleted owing to the lack of a commonly accepted, state-approved definition (see Additional Comments in the next section regarding groundwater discharges). The underlined bracketed text is an option for Ecology to consider if the agency feels compelled to differentiate between the two regulatory frameworks for groundwater.]

Seattle proposes two options for Paragraph B, with the preferred option provided first.

- B. [Preferred alternative – suggest replacing proposed text with the following] The Permittee shall comply with Special Condition S7.C.8 (Illicit Connection and Illicit Discharges Detection and Elimination) to prohibit all non-stormwater discharges into MS3s owned or operated by the Permittee, except that pursuant to 40 CFR 122.26(d)(2)(iv)(B)(1), any of the following categories of non-stormwater discharges flowing into the MS3 owned or operated by the Permittee shall be addressed by the Permittee through further municipal regulations, enforcement, or management activities only when such category of discharge is identified by the Permittee as a significant contributor of pollutants to waters of the state:

Lawn watering and landscape irrigation

Diverted stream flows

Rising ground waters

Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers

Uncontaminated pumped ground water

Water line flushing and discharges from potable water sources

Foundation drains

Air conditioning condensation

Irrigation water

Springs

Water from crawl space pumps

Footing drains

Flows from riparian habitats and wetlands

Dechlorinated swimming pool discharges

Street wash water

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Individual Residential Car Washing

[Seattle Note: Seattle's preferred alternative presented in paragraph B above is based on the exercise of municipal authority rather than (as in the preliminary draft permit) eliminating flows from a process or a property over which a Permittee may have no control. Seattle's preferred alternative: (1) more clearly identifies the categories of non-stormwater discharges that are to be addressed and how, incorporating categories currently contained in Appendix 4; (2) places the responsibility for determining if additional measures are necessary upon the Permittee; and (3) requires the Permittee to take additional measures if deemed necessary. An alternative to the above preferred that modifies, rather than replaces, the language in the preliminary draft permit is provided below.]

- B. [Alternative] This permit authorizes discharges of stormwater associated with industrial and construction activity, process wastewater, and non-stormwater discharges from municipal separate storm sewers owned or operated by the Permittee, to waters of the state, only under the following conditions:
1. Non-stormwater discharges and process wastewater into a Permittee's MS3 must be authorized by another *National Pollutant Discharge Elimination (NPDES)* permit issued by Ecology, or the Permittee must be in compliance with Special Condition S7.C.8 Illicit Connections and Illicit Discharges Detection and Elimination; or
 2. *Stormwater associated with industrial activity*, as defined by 40CFR122.26(b)(14), discharging into a Permittee's MS3 must be authorized by a separate individual or general NPDES permit, such as the Industrial Stormwater General Permit, Construction Stormwater General Permit, or another General Permit or individual permit issued by Ecology, or Permittee must be in compliance with Special Condition S7.C.8 Illicit Connections and Illicit Discharges Detection and Elimination.

[Seattle Note: The original wording in the preliminary draft permit appears to be based on an NPDES model for a private site, where the single permittee has actual control of discharges from its own property or process. This is not the case with stormwater, which receives flows into its MS3 from properties owned by others. A municipal permittee can regulate others and implement well-designed programs. However, a permittee cannot guarantee that others are not illegally discharging into its MS3, which is how the proposed requirement in the preliminary draft permit reads. The proposed redraft above: (1) clarifies responsibilities for discharges into, rather than out of, the Permittee's MS3, and (2) links a Permittee's compliance with this section with compliance with the associated SWMP component of Special Condition S7.C.8, rather than reliance on Ecology-issued NPDES permits. (See also the Additional Comments in the next section.)

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- C. This permit authorizes discharges from emergency and non-emergency fire fighting activities.

[Seattle Note: In the federal CWA, the definition for an illicit discharge specifically excludes “fire fighting activities” which we view should include both emergency and training activities. See also Additional Comments in the next section regarding fire fighting activities.]

- D. This permit does not authorize illicit discharges except ~~as allowed in when~~ Permittee complies with Special Condition S7.C.8. *Illicit Connections and Illicit Discharges Detection and Elimination*, nor does it relieve entities responsible for illicit discharges, including spills of oil or hazardous substances, from responsibilities and liabilities under state and federal laws and regulations pertaining to those discharges.

[Seattle Note: The minor revision above more clearly links a Permittee’s compliance with this section with compliance with the associated SWMP component of Special Condition S7.C.8.]

S5 - COMPLIANCE WITH STANDARDS – PROPOSED REVISIONS

Seattle is providing two alternative approaches in S5.A. for addressing the issue of compliance with standards in this municipal stormwater NPDES permit. Either alternative will satisfy the five basic principles expressed at the beginning of this attachment while, at the same time, avoiding the regulatory and programmatic difficulties that are currently presented in the preliminary draft permit (See Additional Comments section below).

S5 - PROPOSED REVISION #1: COMPLIANCE WITH STANDARDS

- A. Discharges authorized by this permit under Special Condition S2. AUTHORIZED DISCHARGES are in compliance with existing state and federal regulatory requirements for municipal stormwater discharges. This includes compliance with requirements for municipal stormwater discharges contained in the federal Clean Water Act, Washington State surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (chapter 173-204 WAC), and human health-based criteria in the national Toxics Rule (Federal Register, Vol. 57, NO. 246, Dec. 22, 1992, pages 60848-60923).

[Seattle Note: The paragraph above is consistent with the federal Clean Water Act, EPA guidance for municipal stormwater permits, the ruling of the Ninth Circuit Court of Appeals, and Ecology’s Report to the State Legislature regarding its intentions for NPDES stormwater permits (Ecology 2004a). We believe the requirements of an Ecology-approved municipal stormwater NPDES permit(which includes the Manual) is more than analogous to “approved stormwater technical guidance documents” and should, therefore, be similarly endorsed by Ecology. Finally, the wording in the paragraph above clearly addresses Ecology’s stated concern regarding the need to issue a permit that does not specifically allow violations of WQS.]

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B. In order to meet the goals of the Clean Water Act, municipalities regulated under this permit are required to use controls that reduce the discharge of pollutants from their MS4 to the Maximum Extent Practicable (MEP). Compliance with the terms of this permit satisfies this requirement.

[Seattle Note: The paragraph above links complying with the terms of this permit with complying with the requirement of the CWA.]

C. Compliance with Special Condition S7.C.5 (Controlling Runoff from New Development, Redevelopment and Construction Sites) and S7.C.7 (Source Control Program) satisfies the state requirement under Chapter 90.48 RCW to apply all known, available, and reasonable methods of prevention, control and treatment (AKART) prior to discharge.

[Seattle Note: Paragraph C above clearly links the BMP selection and site planning processes, types of BMPs and design criteria, and source control activities contained in Ecology's Manual (Appendix 1 or equivalent) with AKART.]

S5 - PROPOSED REVISION #2: COMPLIANCE WITH STANDARDS

A. In order to meet the goals of the Clean Water Act and sufficiently address applicable surface water, ground water and sediment management standards, each Permittee shall use controls that reduce the discharges of pollutants from MS3s owned or operated by Permittee to the Maximum Extent Practicable (MEP). Compliance with the terms of this permit shall fully satisfy this requirement and constitutes compliance with all existing statutory and regulatory requirements for municipal stormwater discharges

[Seattle Note: The paragraph above is consistent with the federal Clean Water Act, EPA guidance, the ruling of the Ninth Circuit Court of Appeals, and Ecology's Report to the Legislature regarding its intentions for NPDES stormwater permits (Ecology 2004). It also links complying with the terms of this permit with complying with all legal requirements for MS4s.]

S5 - PROPOSED REVISION (continued) – ADDITIONAL REQUIREMENTS

The paragraph below is common to both options and would appear immediately following Option #1 or #2.

B/D. The actions listed below will be taken if the Permittee and Ecology determine, based on well-documented site-specific information, that a significant water quality problem in the receiving water caused by an MS3 owned or operated by the Permittee can be improved by implementing additional programmatic measures beyond those required in Special Condition S7.

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1. The Permittee shall submit a report to Ecology within 60 days of a determination by the Permittee and Ecology. The report shall include:
 - i. A summary of technology-based BMPs and programmatic activities currently being implemented that are affecting the discharge from the Permittee's MS3.
 - ii. An implementation schedule for additional programmatic activities that will be implemented.
2. Ecology shall review the report and, in writing within 30 days, shall approve the additional programmatic activities and the Permittee's implementation schedule or require the Permittee to modify its report.
3. The Permittee shall submit a modified report to Ecology within 30 days of notification to modify.
4. Within 30 days after receiving written approval by Ecology of the report described above, the Permittee shall revise its SWMP and implement additional programmatic activities in accordance with the approved schedule.
5. The Permittee shall include in its Annual Report an update on its revised SWMP.
6. So long as the Permittee has complied with the procedures set forth above and is implementing its revised SWMP according to the approved implementation schedule, the Permittee does not have to repeat the same procedures for the water quality problem unless directed otherwise by Ecology.

[Seattle Note: Paragraph C above describes the process a Permittee and Ecology must take should additional, site-specific measure be required. It defines responsibilities, includes Ecology in the approval process, and will provide a record of actions taken. Paragraph C also reflects current practices. Local jurisdictions often ramp up selected programmatic activities in coordination with state regulators in response to site-specific information that indicates additional measures are required to protect water quality. Consider, for example, Seattle's ongoing efforts to reduce pollutants in stormwater discharges into the Lower Duwamish River, efforts that are being conducted in close collaboration with Ecology and EPA.]

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Additional Comments: Seattle's review of Special Condition S2 (Authorized Discharges) and S5 (Compliance with Standards) identified six critical topics requiring detailed discussion to more fully present Seattle's viewpoints. These six topics are presented below. Proposed revisions in the section preceding adequately address Seattle's concerns.

1. *New and Existing Stormwater Discharges (S2.A).* Ecology proposes to differentiate between new discharges (defined as either a new source or a new outfall) and existing discharges. The only practical implication of this differentiation for a *new discharge* should be that Ecology's Minimum Requirements (or approved equivalent) must be applied¹. Seattle's proposal specifically links discharges authorized by the permit with the Permittee's compliance with S7.C.5 (Controlling Runoff from New Development, Redevelopment, and Construction Sites).

From a programmatic and regulatory standpoint, a permittee's municipal separate stormwater system should be addressed as a whole and not artificially divided up into "existing discharges" and "new discharges." Differentiating between new discharges and existing discharges with the aim of placing a stricter set of *outcome* requirements on new discharges is inconsistent with the federal Clean Water Act (CWA). Municipal stormwater outfalls or discharges are not "new discharges" or "new sources" as contemplated in federal CWA in sections such as 40 CFR § 122.2 and § 122.29. The concepts for other point sources can and must be interpreted differently from municipal stormwater. This is because regardless of how (or if) one defines new or old, discharges from municipal storm sewers are singularly required by the CWA to reduce pollutants to the *maximum extent practicable* (MEP). Furthermore, the standard of MEP is established through a set of required programmatic and structural best management practices (BMPs) rather than mandated outcomes. This is consistent with EPA guidance, the ruling of the Ninth Circuit Court of Appeals, and Ecology's report to the State Legislature on NPDES stormwater permitting (Ecology 2004). Ecology can comfortably stand behind the Stormwater Management Program prescribed in the permit, including Minimum Requirements from its Manual, as representing MEP.

Although it is appropriate to require a Permittee to adopt regulations requiring structural BMPs be installed when new development or redevelopment occurs, this is a reflection of a different standard for MEP (one based on the opportunity presented to install such facilities) and *not* an indication that a "new source" or a "new discharge" is being created. It should be noted that in the case of Seattle, municipal stormwater runoff has been occurring for over 150 years, during which time many locations have undergone a number of redevelopment activities, none of which can properly be considered to have created new runoff. In summary, no additional terms or conditions differentiating between new discharges and existing discharges are required, and the preliminary draft

¹ Consistent with the implementation schedule in S7 (Stormwater Management Program) for adopting new ordinances equivalent to Ecology's Minimum Requirements and as limited under state law for projects vested under older development requirements.

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permit's attempt at doing so presents significant difficulty in legal interpretation and programmatic actions.

Some additional considerations:

- New authorization for discharges from MS3 is not needed because the 1995 MS4 general NPDES permit already covers Seattle's entire municipal separate storm sewer system.
 - New discharges do not exist because Municipal Stormwater Permits are issued on a system- or jurisdiction-wide basis. This is uniquely allowed for municipal stormwater by the Clean Water Act. The permit covers the geographical area of a city or county, not specific outfalls, whether new or old.
 - The MS4 permit is not extended or modified when a new outfall is constructed, because the permit is area-wide rather than outfall-specific. The same municipal stormwater flows from the same broadly-defined area.
 - Similarly, the nature of a municipal outfall structure or discharge does not change from "existing" to "new" when development activity occurs in an area upstream that the permittee regulates. In general, private development activity is not a new discharge or source (as in, for example, an industrial facility requiring an NPDES permit) in part because Ecology lacks the obligation or authority to issue non-construction NPDES permits for such development. A contrasting situation where Ecology is required to issue an NPDES general permit is addressed in S2.B. Furthermore, stormwater changes from development are fully addressed by the SWMP requirements of S7, which requires that permittees regulate and develop according to approved BMPs.
 - Finally, there is no "new source" because EPA has not promulgated any standards of performance for municipal stormwater. The general concepts simply do not apply to municipal stormwater.
2. *New Stormwater Outfall (S2.A).* The preliminary draft permit's proposed definition for *new stormwater outfall* will severely limit Seattle's ability to correct existing drainage problems. In some cases, new or enlarged outfalls (under current definition, both of these situations are classified as "new stormwater outfalls" and therefore qualify as "new stormwater discharges") must be constructed to correct flooding problems caused by inadequately sized drainage systems. In Seattle, the drainage systems that are experiencing flooding problems that necessitate the construction of a new or enlarged outfall are fairly large (>500 acres) with largely built out drainage areas that were developed long before requirements for stormwater treatment or flow control were in place. The proposed permit language stipulates that new stormwater discharges comply with the technical requirements in Appendix 1, which in effect could require permittees to either construct regional stormwater treatment and/or flow control facilities throughout the entire drainage basin (not just the areas that will develop in the future that trigger

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code requirements) or install an end-of-pipe facility sufficiently sized to achieve the same end. Locations for regional facilities are extraordinarily difficult to find and the cost for end-of-pipe treatment is prohibitive.

Overall, the requirements in the preliminary draft permit for a new stormwater outfall places a severe constraint on the ability of a Permittee's ability to meet other requirements of public safety, protection from flooding, and promised levels of service. Additionally, the requirements present an acute regulatory challenge when major projects are envisaged in Seattle that involve redirecting existing flows from developed areas into new outfalls. Finally, there are foreseeable situations in Seattle where it would be environmentally beneficial to receiving waters to consolidate a number of smaller outfalls into a larger outfall at a new location. The preliminary draft permit's *outcome-based* requirements for new outfalls are a severe disincentive for such projects to be undertaken.

3. *Stormwater Discharges to Groundwater & Hydraulic Continuity (S2.A).* The preliminary draft permit places groundwater *not in hydraulic continuity with surface water* in a separate regulatory category from groundwater that is in hydraulic continuity with surface water. Seattle's proposal eliminates this condition because at present there is no state-approved, consistent, scientifically-based interpretation of hydraulic continuity. The lack of an approved definition and methodology to regulate these two variants of groundwater places an unnecessary burden on both Ecology and Permittees as regulating authorities. Seattle's proposal eliminates the clause. As an alternative, the requirement could read:

Stormwater discharges to ground waters ~~not in hydraulic continuity with surface water~~ that have not been determined in writing by Ecology to flow to waters of the United States are covered in this permit only under state authorities, Chapter 90.48 RCW, the Water Pollution Control Act. [Added text underlined.]

4. *Discharges from an MS3 Associated with Other NPDES Permits (S2.B).* The preliminary draft permit authorized discharges from municipal storm sewers owned or operated by a Permittee *only* if all required NPDES Stormwater Permits have been issued by Ecology for sources upstream of the outfall. This places an unfair burden on a Permittee, in that compliance with this condition as written is contingent on other entities (in this case, Ecology and sites requiring NPDES permits) meeting their regulatory obligations for a Permittee to meet its regulatory obligations. A permittee cannot guarantee that others will not illegally discharge *into* its MS3. It is not a practicable solution, therefore, for the permit to simply not authorize discharges *from* the MS3 even when the municipal permittee has complied with the terms of its permit. Such an approach could create unpermitted MS3 discharges for reasons out of the Permittee's control. The maximum extent practicable in this case is that a Permittee can regulate others, communicate with Ecology when it learns of a need for NPDES permits, and comply with a program as in S7.C.8 (Illicit Connections & Illicit Discharges). Seattle's proposal reflects this concept of MEP.

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5. *Discharges from Fire Fighting Activities (S2.C).* The preliminary draft permit authorizes discharges from fire fighting activities provided such discharges have *not* been identified as significant sources of pollutants to waters of the state, but specifically prohibits discharges associated with fire fighting training. Fire fighting and training exercises are a vital public function that cannot stop upon the effective date of the permit.
6. *Unauthorized Discharges (S5.A, S5.B, S5.C.1).* In Section S2, the preliminary draft permit authorizes stormwater discharges from municipal storm sewers; however, in Section S5, the permit does not authorize discharges that violate Water Quality Standards² (WQS). Ecology then presents a difficult-to-follow set of criteria by which compliance with WQS will be determined, which differentiates between existing stormwater discharges (S5.B) and new stormwater discharges (S5.C).

For *new stormwater discharges*, the preliminary draft permit contains interim requirements for the period between the effective date of the permit and the date a Permittee has adopted technical standards equivalent to Ecology's Minimum Requirements (Appendix 1 of permit). To comply with this section of the preliminary draft permit, a Permittee is required:

- To *inform* developers that discharges from their sites must not violate WQS.
- To *inform* developers that they can meet the above requirement *only* by following Ecology's technical standards, which are contained in Appendix 1 but not codified by local jurisdiction, or by doing something else, provided that the developer can demonstrate that by doing something other than Appendix 1 their discharges will not violate WQS. In the case of the second option, the preliminary draft permit does not indicate to whom the demonstration must be made, the methods by which such a determination must be demonstrated, and who has the final authority to decide that the proposal will both comply with WQS and satisfy the state requirement for applying AKART.

Seattle is still required by its 1995 NPDES Municipal Stormwater Permit to issue development permits to project proponents requiring them to comply with existing local ordinances. Municipalities like Seattle are not legally free to regulate development in such ad hoc, case-by-case basis as proposed in the preliminary draft permit. Attempting to do so is not only inappropriate, but it is a disservice to our constituency, to our rate payers, to the development community, and to representatives of environmental advocacy groups, all of whom have a fair expectation that local jurisdictions will consistently apply development standards and regulations. Finally—and importantly—the preliminary draft permit presupposes that Ecology's Minimum Requirements provide everywhere a

² "Water Quality Standards" as used here means Surface Water Quality Standards, Ground Water Quality Standards, Sediment Management Standards, and human health-based criteria in the national Toxics Rule.

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superior level of protection when compared to the environment regulations currently in effect at the local jurisdiction. We disagree. As a case in point, consider that Ecology's Minimum Requirements places no post-redevelopment flow control requirements on large projects in highly-urbanized stream basins; Seattle's current development requirements do.

Further, regarding new discharges, in Section S5.C.2, the preliminary draft permit requires that a Permittee apply "additional controls determined necessary to protect beneficial uses" if site-specific information indicates that Ecology's Minimum Requirements are insufficient for a "new discharge.". The shift from referencing WQS to beneficial uses is not appropriate for an NPDES permit. Additionally, the preliminary draft permit does not clearly indicate the process to be followed nor does it delineate the shared responsibilities between a Permittee and Ecology. Seattle's proposal both retains the focus on water quality improvements and defines a process.

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PART B: MONITORING

Summary Recommendation. Seattle agrees with Ecology that BMP effectiveness monitoring is a reasonable permit requirement. However, each Permittee should be able to select the BMPs to be evaluated and determine the level of effort dedicated to this type of monitoring. In addition, Ecology should rely on the TAPE (Technology Assessment Protocol – Ecology) process for the primary venue for BMP effectiveness as much effort has already been put into that endeavor and process.

Table 1 summarizes three options for monitoring. To meet Ecology's objectives, Seattle's preferred alternative is for Ecology to take the lead in developing the receiving water body and outfall monitoring programs and provide oversight to a Permittee-led BMP effectiveness monitoring program (Alternative 1 – Preferred). Included in this option would be an opportunity for Permittees and Ecology to contribute resources, in a combination of funding and in-kind services) to an agreed upon independent organization, which would be responsible for conducting a long-term water quality monitoring program. This recommendation is discussed in more detail in Comment 1 below. However, since it is uncertain whether Ecology would elect to lead the receiving water body and outfall monitoring effort and whether there is adequate consensus among other Permittees to make this a viable option, Seattle also developed a second alternative, which is more consistent with the program outlined in the draft permit.

Table 1. Monitoring Activities and Lead Agencies

	Receiving Water/Outfall	BMP Effectiveness	Programmatic
Alternative 1 - Preferred	Ecology	Permittees	None
Alternative 2	Permittees*	Permittees*	Permittees*
Ecology Proposal	Permittees	Permittees	None

* Under Alternative 2, each Permittee selects the type of monitoring activity or combination of monitoring activities to be conducted.

Alternative 2 is a Permittee-led effort that allows flexibility for Permittees to contribute to meeting Ecology's objectives by utilizing their particular area of monitoring expertise in conjunction with each jurisdiction's monitoring goals and priorities. Under Alternative 2, Permittees would design and conduct, individually or collaboratively, receiving water body monitoring, stormwater outfall monitoring, BMP effectiveness monitoring, and programmatic adaptive management monitoring³, or some combination of the above. Each

³ Programmatic adaptive management monitoring focuses on evaluating how well a particular stormwater program element is working and what can be done to make it better. Permittees would select specific programmatic activities to evaluate such as a specific public education effort or a specific business inspection strategy. Permittee would then develop methodology appropriate to evaluate the effectiveness of the activity such as behavior change surveys, inline sediment monitoring, or reduction in pesticide sales. Results could then be used to modify the stormwater program element.

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type of monitoring activity would be assigned a credit value based on anticipated level of effort to implement the monitoring (e.g., one credit for one receiving water body monitoring station, two credits for one BMP effectiveness evaluation). The Permittee would be required to implement a specified number of credits of monitoring during the permit cycle.

Both Alternative 1 and Alternative 2 would require significant alteration of the preliminary draft permit language. Seattle is available to work with Ecology and other Permittees in developing permit language to reflect either alternative.

Seattle recognizes that Ecology may not select either Alternative 1 or 2. Therefore, Seattle's comments on the permit language focus only on refining the monitoring approach proposed by Ecology. Additionally, Seattle's comments include responses to questions posed by Ecology in the preliminary draft permit related to monitoring.

Comments on Special Condition S6 in Preliminary Draft Permit.

1. Page 7, lines 2-10, Section S6. Response to Ecology's request for comments on monitoring objectives and collaborative monitoring programs:

The questions that Ecology proposes to be addressed by a long-term water quality monitoring program are appropriate for a statewide monitoring program (page 7, lines 29-33, Sections S6.A.1.a and S6.A.1.b). A scientifically-based statewide water quality trend monitoring program is needed to address Ecology's stated objectives. To be effective, a program of this magnitude needs to be managed across jurisdictional boundaries. Centralized management will ensure that monitoring is conducted in a consistent manner and is designed to answer specific questions about water quality conditions and trends in area receiving water bodies.

Seattle recommends that the statewide program be led and managed by Ecology with funding and technical support contributed by the local jurisdictions. Ecology should also contribute resources to this effort as the lead state agency for receiving waters. It is unlikely that local stormwater management programs will significantly impact water quality in large receiving water bodies, because a number of factors other than urban stormwater can affect water quality, such as land use and the density of urban development, historical land uses, loss of vegetative cover in the riparian corridor, and illegal dumping. Stormwater management programs cannot effectively control these other factors. Receiving water bodies are also considered "waters of the state" and are not under the control of local jurisdictions. Therefore, statewide monitoring and assessment of current conditions and trends in receiving water bodies falls more under the authority of the state than local jurisdictions.

The statewide study would randomly select study sites irrespective of jurisdictional boundaries and implement consistent monitoring of key environmental indicators, some of which are not appropriate to require as an element of the NPDES permit. It is recognized that outside technical support (e.g., consultant or research institution) may be needed to design and implement the monitoring program. Funding provided by both Phase I and Phase II Permittees could contribute to obtaining the necessary support. A modified version of the process that Ecology used to develop the TAPE (Technology Assessment Protocol –

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Ecology) method for BMP performance testing may be useful in coordinating input from the individual jurisdictions and develop specific technical monitoring standards/protocols.

A requirement of the permit would be for Permittees to work together with Ecology to develop a statewide monitoring program during this permit cycle. Although Ecology-led, it is likely that a third party would need to be retained to coordinate Permittee input and develop the statewide monitoring program. One approach would be to develop a work plan prior to the permit being issued identifying roles, responsibilities, and resources that each Permittee would contribute to developing the statewide monitoring program, and contributing these resources could be tied to permit compliance. Once the statewide monitoring program is in place (next permit cycle), one option for Permittee (Phase I or II) compliance with NPDES monitoring requirements would be to contribute financial support (or in-kind services) to implement the program. Ecology would lead the implementation of receiving water body monitoring. Permittees would lead the implementation of outfall monitoring within their jurisdiction.

Seattle believes that it is unrealistic to expect that a collaborative (WRIA-scale or otherwise) Permittee-led process could generate the information needed to meet Ecology's stated objectives for the following reasons:

- Difficulty inherent in establishing consensus among jurisdictions that have widely different water quality issues and monitoring goals, priorities, and capabilities to support a large scale monitoring effort.
- Legal liability issues (e.g., each Permittee could be liable if the monitoring program fails because another Permittee did not fulfill its obligations).

Thus, a single lead organization with appropriate authority is needed to oversee and manage a statewide monitoring the effort.

In addition to the Ecology-led, statewide receiving water body and outfall monitoring program, Permittees would undertake BMP effectiveness monitoring with Ecology oversight as specified in the preliminary draft permit. Permittees are in a better position to test BMPs than Ecology because each is responsible for approving (for private development) and installing (for public projects) these systems within their jurisdiction. For a Permittee-led BMP testing program to be effective, consistent sampling protocols would need to be developed and used by all participants. A modified TAPE process is recommended to develop protocols and review sampling plans proposed by each jurisdiction.

In the absence of an Ecology-led monitoring program, Ecology should allow each Permittee *to contribute* to Ecology's objectives individually or collaboratively as appropriate for their jurisdiction and in conjunction with their jurisdiction's goals and priorities for monitoring (Alternative 2). What may be appropriate and/or effective monitoring for one Permittee may not be appropriate and/or effective for another Permittee. For example, one jurisdiction may choose to focus on receiving water body monitoring, another may look at outfalls, another may look at BMPs, another may look at programmatic activities, and another a combination

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of these. The advantage of this alternative is that it allows each Permittee to bring its monitoring expertise and strengths to meeting Ecology's goals. The disadvantage to this alternative is that it may not provide a consistent approach for all monitoring activities that would allow Ecology to integrate and evaluate the data as a larger set.

2. Page 9, lines 29-34, Section S6.A.3.b.i and Page 10, lines 10-14, Section S6.A.3.e. Recommend allowing the flexibility to conduct long-term monitoring programs in receiving water bodies or at outfalls or a combination. This provides the opportunity for Permittees to apply their monitoring expertise and strengths to meeting Ecology's goals. Recommend requiring (for Cities) three stations located within medium- to high-density sub-basins. This provides flexibility in location of stations while still evaluating land-use type designated to Cities. Due to the myriad of stormwater inputs, monitoring outfalls and receiving water bodies within the same sub-basin would unlikely provide a linkage between the two. Recommend modifying permit Section S6.A.3.b.i as follows:

“i. Each City shall identify potential monitoring stations in receiving waters and outfalls in small sub-basins less than ten square miles in area representing the following land use:

Medium- to high-density urbanized.”

Recommend modifying permit Section S6.A.3.e as follows:

“e. The monitoring program shall include confirmed sampling locations distributed among the geographical areas covered by the permit and among the land uses listed in 3.a.i. and 3.b.i. above. Three sampling locations (receiving water bodies, outfalls, or a combination) will be identified for each land use listed in 3.a.i and 3.b.i. above.”

Note: Section S6.A.3.a.i would also need to be modified to reflect changes to Counties requirements (suggested modification not included in Seattle's comments).

3. Page 10, lines 17-25, Section S6.A.4 and page 15, lines 5-12, Section S6.B.2. Response to Ecology's request for comments on reviewing and approving the Monitoring Programs:

Monitoring programs should be reviewed and approved by Ecology. At a minimum, the review should confirm that the monitoring approaches meet the requirements put forward in Section S6 and Ecology's requirements for Quality Assurance Project Plans (QAPPs). In addition to ensuring a minimum quality level for the monitoring programs, Ecology's review and approval would provide legal security to the Permittees.

Technical review and/or participation are also needed for either an Ecology-led or Permittee-led monitoring program to be successful. The TAPE (Technology Assessment Protocol-Ecology) process currently being applied to performance testing and acceptance of new stormwater treatment technologies appears to have been effective but would likely need to be modified for this effort. It is recommended that Ecology convene a technical panel to develop and/or review the sampling plans (depending on which approach is selected). Panel

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members should be selected based on their expertise in stormwater/water quality monitoring and include representatives from research organizations and consultants that specialize in water quality monitoring, as well as the Permittees themselves.

4. Page 10, lines 27-28, Section S6.A.4. Recommend extending deadlines related to stormwater and receiving water monitoring program development if a collaborative approach is pursued. Although it is realistic that individual Permittees could develop and implement a plan in two years, it is an unrealistic timetable if a collaborative (or Ecology-led) approach is pursued. Recommended change:

“The monitoring program and implementation plan shall be submitted no later than 2 years after the effective date of this permit if developed independently by a Permittee, no later than 4 years after the effective date of this permit if developed collaboratively by Permittees.”

Also recommend changes to Sections S6.A.4.e and Section S6.A.4.f. (Page 12, lines 4-10) (see comment for Page 12, lines 4-10, Section S6.A.4.e and Section S6.A.4.f).

5. Page 11, line 3, Section S6.A.4.c.i.(2) and page 11, lines 7-11, Section S6.A.4.c.ii. Recommend removing non-water quality monitoring requirements except flow, rainfall, and benthic invertebrates. The scope of NPDES monitoring requirements should be limited to water quality parameters. Recommend adding flexibility to use RIV-PAC or B-IBI for benthic invertebrates. Recommend deleting Section S6.A.4.c.ii and modifying Section S6.A.4.c.i.(2) as follows:

“(1) Benthic invertebrates (RIV-PAC or B-IBI),”

6. Page 11, line 23, Section S6.A.4.c.iii. Has Ecology considered allowing inline sediment monitoring rather than stormwater sampling to evaluate toxic components in the discharge? Many of the parameters listed in Section S6.A.4.c.iii would be difficult to measure in stormwater discharges. Sediment samples may be better (and less expensive to collect) for determining presence/absence of these compounds at a particular outfall.
7. Page 11, line 23, Section S6.A.4.c.iii.(6). Stormwater Base/Neutral/Acids (BNA) analyses may not be useful at many outfall monitoring sites. As part of the Lower Duwamish Waterway Superfund investigation, Seattle has been sampling sediment found in various drainage systems throughout the Duwamish area. To date, samples have been collected from 49 onsite catch basin (outside the right-of-way at sites where business inspections were conducted) and 41 catch basins located in the public right-of-way. With the exception of phthalates, BNA compounds were generally found infrequently in right-of-way samples. Given that BNA compounds were often not detected in sediment, it is unlikely that they will be found in stormwater samples.

Phthalates, another class of compounds that are included in the BNA analysis, were detected in over 70 percent of the sediment samples. In addition, samples collected by the City of Tacoma indicate that these compounds are also frequently detected in stormwater runoff

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(Tacoma 2005). King County and Tacoma are currently monitoring atmospheric deposition (using passive wet-dry deposition samplers) to evaluate whether atmospheric deposition contributes significant amounts of phthalates to sediments offshore of stormwater outfalls. Preliminary results indicate that phthalate concentrations are significantly higher in samples collected from the Duwamish valley stations compared to a station located just above the valley area on Beacon Hill.

8. Page 11, line 24, Section S6.A.4.c.iii.(7). Unless there is a specific driver for pesticide data, it is unlikely that pesticide analyses would be appropriate. What is the status of Ecology's recent pesticide sampling effort? Have pesticides been found in many samples? If so, what pesticides are frequently detected? Pesticides (organophosphorus, chlorinated, and nitrogen-containing) were detected infrequently in stormwater samples collected in a small urban catchment in north Seattle (SPU 2004). To capture all of the pesticide products in use would require that samples be analyzed for a number of classes of pesticides. To reduce analytical cost, it would be helpful to narrow down the list of analytes.
9. Page 12, lines 4-10, Section S6.A.4.e and Section S6.A.4.f. Recommend extending deadlines related to stormwater and receiving water monitoring program development if a collaborative approach is pursued (refer to comment for Page 10, lines 27-28, Section S6.A.4).
Recommended change:
 - e. An approved or final monitoring plan must be adopted no later than 30 months after the effective date of this permit if developed independently by a Permittee, no later than 54 months after the effective date of this permit if developed collaboratively by Permittees.
 - f. Full implementation of the stormwater and receiving water monitoring program shall begin no later than 36 months after the effective date of this permit if developed independently by a Permittee, no later than 60 months after the effective date of this permit if developed collaboratively by Permittees. The third party or parties selected to develop the monitoring plan may continue to be utilized to collect and analyze the data and to write the subsequent reports required under this permit.
10. Page 12, lines 12-13, Section S6.A.5. Recommend extending the annual deadline to March 31 of the following year to allow adequate time to compile and validate data and prepare a report. Three months from the end of the sampling period is inadequate to produce a report considering the time required for laboratory analysis and reporting; data QC review, management and analysis; and report preparation and review. Recommend reporting begin after the first year of data collection. Recommended change:

“The stormwater monitoring report shall be submitted by March 31 of the following year, beginning the first year of data collection.”
11. Page 12, lines 28-30, Section S6.A.f. Recommend clarifying reporting requirements.
Recommended change:

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“f. If the Permittee monitors any pollutant more frequently at the sampling locations specified in Section S6.A.3.e than required by the required monitoring program, then the results of this monitoring shall be included in the report. If the Permittee conducts any other stormwater monitoring in addition to that required in the required monitoring program, then it shall provide a description of the additional monitoring in the report.”

12. Page 13, lines 3-12, Section S.6.B. Response to Ecology’s request for comments on BMP Effectiveness Monitoring Program:

It is appropriate to include BMP effectiveness monitoring as part of the permit for the reasons indicated by Ecology. Comments on the BMP effectiveness monitoring approach are provided separately but focus on clarifying responsibilities and timelines for evaluating the proposed technologies.

13. Page 13, lines 36-37, Section S6.B.1. Permittee BMP Effectiveness Monitoring requirements are unclear. Recommend requiring each Permittee to design and begin implementation of BMP effectiveness monitoring at two locations during the current permit cycle. Permittees should focus BMP effectiveness monitoring on BMPs appropriate for their jurisdiction and for which they have monitoring expertise. For example, Seattle has expertise in designing, installing, and monitoring innovative stormwater treatment technologies utilizing bioretention and flow control strategies (e.g., natural drainage systems) and should continue focusing limited monitoring funds on collecting information on the performance of these systems. In addition, due to its ultra-urban nature, Seattle has very few of the other listed structural BMPs designed to the required criteria, and it is anticipated that very few will be constructed in the near future. Recommend adding language to indicate elements of the BMP effectiveness monitoring program may extend beyond the permit term due to the time required to coordinate, design, implement, and report on these studies. Recommended BMP effectiveness monitoring at two BMPs represents approximately current level of effort for BMP monitoring. Recommend modifying language as follows:

“The goal of BMP effectiveness monitoring program through the NPDES permit is to evaluate all of the BMPs listed below, at no less than 2 sites per BMP, and 6 flow reduction strategies. Each Permittee is responsible for monitoring two structural BMPs. Monitoring of two flow control strategies may be substituted for one structural BMP. If a collaborative approach is chosen, the number of BMP structures monitored may be pooled and shared. The BMP effectiveness monitoring program may include elements that extend beyond the permit term.”

14. Page 15, line 31, Section S.B.2.h. Not all BMPs and flow control strategies (e.g., natural drainage systems) will have a monitorable input. In many cases inflow to these systems is diffuse and cannot be easily isolated for sampling. Therefore, flows and water quality inputs for these systems may need to be modeled based on available literature or a paired watershed. Recommended change:

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“h. The parameters to be measured in the inflow to, as appropriate, and outflow from each BMP, or flow reduction strategy, as appropriate for the contributing area land use and performance expectations of the selected BMP:”

15. Page 16, lines 15-17, Section S.B.2.i. Recommend removing reference to Phase II Permittees. Phase I Permittees should not be responsible for developing Phase II programs. Recommended change:

“i. The BMP effectiveness monitoring program must also describe a framework for enhancing BMP effectiveness monitoring during future permit cycles.”

16. Page 16, lines 26-27, Section S6.B.3. Recommend extending the annual deadline to March 31 of the following year to allow adequate time to compile and validate data and prepare a report. Three months from the end of the sampling period is inadequate to produce a report considering the time required for laboratory analysis and reporting; data QC review, management and analysis; and report preparation and review. Recommend reporting begin after the first year of data collection. Recommended change:

“The BMP effectiveness monitoring report shall be submitted by March 31 of the following year, beginning the first year of data collection.”

REFERENCES

Ecology. 2004a. Municipal Stormwater NPDES Permit Program: Report to the Legislature. *Report*. Publication Number 04-10-010. January 2004.

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